

Route 2 – Box 208A
Custer, South Dakota 57730 USA.

phone: (605)673-3201
FAX: (605)673-3200
E- mail: spm@thermoshield.com

July 27, 2005

Elaine T. Hebert, Energy Specialist
State of California
California Energy Commission
1516 Ninth Street, MS 25
Sacramento, CA 95814

Regarding the Building Energy Efficiency Standards:

Dear Ms. Hebert:

I am writing in response the July 11 th letter submitted by Mr. Bob Hyer, of APOC division of Gardner Corporation.

We disagree strongly with some of Mr. Hyer's statements. Our main concern with the standards as currently-written, is the excessive cold weather elongation requirements that are currently in the standards. In short, we agree that the ASTM D 522 Mandrel Test is far more practical a test for the California Standards. This test shows if the coatings are highly flexible and will not crack at very cold temperatures, they also give sufficient evidence if the coatings are going to fail with cold weather contraction and expansion. This test will be very effective in determining if the coating being tested has the necessary elasticity to survive in cold California weather conditions.

We find Mr. Hyer's comments about flexibility in only one direction with the mandrel test absolute nonsense. Is he trying to say a fluid applied coating will not have equal elongation in every direction? His statement is completely without merit.

Mr. Heyer talks about the real world. Our coatings pass the ASTM D 522 Mandrel test and we are not certain they would pass the ASTM D 2370 test. Does this mean our roof coating is inferior as Mr. Heyer suggests?

Here are some actual "real world" facts:

As you add more solids to a coating they become less elastic. We have in our roof coating formulation a lot of very special solids, like titanium dioxide for more reflection, greater UV resistance, and longer life. We have a high percentage of hollow vacuum ceramic bubbles, similar to the ceramics in space shuttle tiles, that provide properties like fire resistance, self cleaning, scurbability, more reflection and dissipation, sound deadening, UV resistance, chemical resistance, and stain resistance. We feel these are "other critical properties" of a good reflective coating.

Real world fact: Last summer Northern California had wild fires. One of these fires went through a 60 unit mobile home park. When the fire was done, only three mobile homes remained standing. They had one thing in common, they were coated with Thermo-Shield Roof Coat and our Exterior Wall Coating. Did our coating save these buildings? We are confident they did. If we would have left our critical solid ingredients to make the coatings "very flexible", would they still be fire resistant to save these buildings? NO.

Real world fact: Our Coatings were among 26 reflective roof coatings tested by Oak Ridge Laboratories, TN, through direction of the US Department of Energy and EP A, along with National Roof Coating Manufacturing Assn. It was a 3 year test to determine the benefit of reflective roof coatings on reducing heat flux, and the effect of aging on these coatings. At the end of the 3 year test period, our roof coating had by far the best heat reduction through the test panels, "the best product in the test program". If we would take out critical solid ingredients to make our coatings excessively elastic would they have performed so well? NO.

Our roof coating was developed and the first projects done in Colorado Springs, CO, elevation over 6000 feet, so the UV has been intense, Thermal Shock intense (a 50 degree change in temperature in 24 hours is not uncommon there). This area has cold winters and hot summers. We have roofs now 20 years old in this area coated with our roof coating, still providing energy savings, still providing water proofing. If we removed critical solids from our formulation to make our roof coat extremely flexible and elastic, would the coatings have lasted this long on these roofs? Would they still be providing waterproofing and energy savings? NO .

Real World Fact. Our Roof Coating has been used on many roofs all over the world where roof movement and leaking were problems they could not cure with other roofing products. These roofs continually cracked open and leaked. Thermo-Shield has solved these problems. Do we have too little elasticity, so we are "inferior". NO.

Real World Fact. Thermo-Shield roof Coat is being used extensively in the hot dry sometimes very humid Persian Gulf region and standing up to these extreme conditions for over 10 years now. Could we do this by removing solids from our formula to make our coatings very flexible? NO.

Real World Fact. Our coatings are used on Colorado ski area chair lifts where temperatures are extremely cold, the vibration and UV are excessive, and our coatings are lasting without problem. Could we do this by removing critical solids to make our coatings excessively elastic? NO.

Real World Fact: Our roof Coat has been used on kiln doors to protect workers from getting burned. EXTREMELY HOT! Could we do this if we took out critical solids to make our coatings very elastic? NO.

Real World Fact: Our Roof Coating has been used extensively in very hot humid South East Asia for over 15 years now, where UV, leaking, moisture, mold, mildew, substrate movement are all very serious problems, and we solve all those problems. Could we do all that if we took out critical solids to make our coatings overly elastic? NO.

Do our roof coatings have any problem with flexibility and elasticity in any of the over 40 countries around the world where they are being used on a regular basis (this includes by the way the state of California). NO. On the contrary, we do not have elasticity or flexibility problems even under extreme conditions in weather and in building structures.

Do we pass the ASTM D522 Cold Mandrel bend test? YES.
Would our coating pass the ASTM D2370 60% elongation at 0°F? I doubt it.


Page 4

What I am working up to here, a product being very elastic does not make it superior. Yes elasticity is critical, but our coating is "real world proof" that the ASTM D522 test is sufficient to show sufficient cold weather elasticity to stand up to California conditions, we have been doing it in California for around 10 years now.

There are other very good white coatings on the market as well, that could be shut out of California programs if the ASTM D2370 standard is used. Again referring to the "real world", what do you really want from your testing program, excellent roof coatings or material for sling shots.

We sincerely encourage you will choose the ASTM D522 over the D2370 testing method for use in your test standards.

Sincerely yours
Joe Raver, President SPM
Thermo-Shield, Inc

A handwritten signature in blue ink that reads "Joseph L. Raver". The signature is written in a cursive style with a large, looping initial "J".